

What is claimed is:

1. An optical system for a projector, comprising:

a light source;

a projection lens for externally projecting light incident from the light source;

an image-forming panel disposed between the light source and the projection lens, and for modulating the light incident at a certain incident angle from the light source, forming an image, and reflecting the formed image onto the projection lens;  
and

a light integrator disposed between the light source and the image-forming panel, wherein the light integrator transforms a cross-sectional face of the light, incident from the light source and radiated onto the image-forming panel at a certain incident angle, into a shape corresponding to the image-forming panel plane so that the cross-sectional face of the light has the same margin width around edges of the image-forming panel plane.

2. The optical system as claimed in claim 1, wherein the light integrator reduces the shape of the cross-sectional face of the light incident from the light source and radiated onto the image-forming panel at a certain incident angle in proportion to  $\cos \theta$  with respect to the original shape of the cross-sectional face of the light in the direction of the keystone vector formed on the image-forming panel, when the incident angle of the light incident onto the image-forming panel is  $\theta$ .

3. The optical system as claimed in claim 2, wherein the light integrator comprises a light tunnel for transforming the cross-sectional face of the light collected from the light source into a predefined desired shape.

4. The optical system as claimed in claim 1, wherein the image-forming panel is a digital mirror device panel having reflector arrays thereon.

5. The optical system as claimed in claim 4, wherein the digital mirror device panel is arranged so that the direction of the keystone vector formed on the digital

mirror device panel corresponds to a direction vertical to the pivotal axes of the reflectors.

6. A projection method for a projector having an image-forming panel forming images, comprising:

emitting and collecting light;

receiving the collected light, transforming a cross-sectional face of the incident light into a predefined desired shape, and emitting the light onto the image-forming panel, wherein the cross-sectional face of the light is transformed by reduction in proportion to  $\cos \theta$  with respect to the direction of the keystone vector formed on the image-forming panel, when the incident angle of the light incident onto the image-forming panel is  $\theta$ ;

radiating and modulating the emitted light, the cross-sectional face of which is transformed, onto the image-forming panel at the incident angle of  $\theta$ ; and

magnifying and projecting the light forming the image.

7. The optical system as claimed in claim 1, wherein the light integrator comprises a pipe for transforming the cross-sectional face of the light collected from the light source into a predefined desired shape.

8. The optical system as claimed in claim 1, wherein the light integrator comprises a rod for transforming the cross-sectional face of the light collected from the light source into a predefined desired shape.